



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,310	06/06/2001	Toshiyuki Miyauchi	450100-03277	7066
20999	7590	02/11/2005	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			TORRES, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 02/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/875,310

Applicant(s)

MIYAUCHI, TOSHIYUKI

Examiner

Joseph D. Torres

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 September 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-14,16 and 19-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-14,16 and 19-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. On page 10, last paragraph of the Applicant's disclosure the Applicant introduces the document S. S. Pietrobon, "Implementation and performance of a turbo/MAP decoder, Int. J. Satellite Commun., vol. 16 pp. 23-46, January-February 1998. The Examiner is requesting a copy of the document.

### ***Response to Arguments***

2. Applicant's arguments filed 09/16/2004 have been fully considered but they are not persuasive.

The Applicant contends, "However, the recited 'linear approximation means' corresponds to hardware and/or software elements within the decoder which practically apply the mathematical algorithm in the process of decoding digital information. As discussed in MPEP j 2106,IV,2(b)(ii), 'For such subject matter to be statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm in the technological arts.' (MPEP page 2100-18)".

The Examiner disagrees and asserts that there is nothing in the claim language tying any of the mathematical operations to any hardware. Binary data such as ones and zeros is digital data and can be arranged to represent digital information. Convolutional encoding of the digital data can be performed by hand using a matrix by multiplying a

Art Unit: 2133

digital information vector of comprising ones and zeros by the matrix to produce convolutionally encoded data.

The Applicant provides the following example from the MPEP as an example of statutory subject matter, ""A digitally filtering process for removing noise from a digital signal comprising the steps of calculating a mathematical algorithm to produce a correction signal and subtracting the correction signal from the digital signal to remove the noise." The Examiner asserts first of all that the excerpt is provided by the MPEP to present an example of a "**claimed** statutory process" [Emphasis Added]. The Examiner asserts that even if the Applicant intends such a process, nowhere in the claim language does the applicant claim such a process.

The Examiner asserts that the claimed statutory process, as recited above, is statutory because unlike digital data, a digital signal requires hardware.

The Applicant contends, "This is analogous to the present invention claiming a decoding method for decoding digital information including a step of calculating a linear approximation correction term for use in the decoding operation".

As pointed out above, the claimed statutory process, as recited above, is statutory because unlike digital data, a digital signal requires hardware.

The Applicant contends, "Accordingly, the present invention is clearly statutory subject matter as the invention is hardware/software which practically applies a mathematical

algorithm to produce a tangible result (decoded data).” Decoded data is a data structure. Data structures are non-statutory.

The Examiner disagrees with the applicant and maintains all 101 rejections of claims 1, 4-14, 16, and 19-29. All amendments and arguments by the applicant have been considered. The 101 rejections are maintained.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 4-14, 16, and 19-29 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. Claims 1 and 16 recite, “the input is digital information coded as convolutional code”, in the preamble. See MPEP § 2172.01. The omitted structural cooperative relationships are: relations between the algorithm in the body of the claims and “digital information coded as convolutional code”.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Art Unit: 2133

4. Claims 1, 4-14, 16, and 19-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

See the Non-Final Action filed 06/14/2004 for detailed action of prior rejections.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

Art Unit: 2133

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph D. Torres, PhD  
Primary Examiner  
Art Unit 2133

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.